

DETAILED ACTION

Any rejections and/or objections made in the previous Office Action and not repeated below, are hereby withdrawn. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

A reply to the Applicants' arguments is presented after addressing the Claims.

Claim Rejections - 35 USC § 102

- 1) Claims 1-6, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Cyr *et al.* (US 6455620).
- 2) Cyr *et al.* (*Abstract*) disclose compositions comprising an oxidation catalyst and polyethers that include substituted or unsubstituted, polyalkylene glycol copolymers and blends with other polymers (*col 2 lines 55-56*) including polycondensation polymers (*col 5 lines 10-13*).
- 3) As to Claim 1-3:
- 4) The polyalkylene glycols disclosed (*col 3 lines 16-55*) comprise polypropylene glycol {also known as polyoxy-1,2-propanediyl, see informational reference: EP1878780, page 4 lines 13-14} polymer segments (*col 3 lines 49-55*). The segments prior to reacting are expected comprise functional groups to enable co-polymerization (*col 8 lines 3-6*).

5) Polyalkylene glycols, including polypropylene glycol or polyoxy-1,2-propanediyl (*col 3 lines 16-55*), can be covalently bound to polyamides in the form of a co-polymer (*col 7 lines 20-22 and lines 31-34 and lines 55-56*); thermoplastic polymers for co-polymerization also comprise polyesters (*col 5 lines 10-13*).

6) Blends of polymers are indicated to comprise polyethylene terephthalate {PET}.

7) As to Claim 4:

8) Copolymer polyalkylene glycols can be alternating and comprising polyethylene glycol and polypropylene glycol (*col 3 lines 45-54*) and can further comprise polyester and polyamide blends including co-polymers (*col 5 lines 1-12 and col 5 lines 26-58*) of polyesters with diols including 1-4 butane diol (*col 5 line 62*); 1,4 butane diol is a monomer of PTMEG or polytetramethylene glycol with 4 carbon atoms as indicated in column 2, line 54.

9) As to Claims 5-6:

10) The polyalkylene component of a polycondensate copolymer may be up to 99 weight percent of a polyester/polyalkylene glycol polymer (*col 8 lines 6-8*). Example 36 identifies a copolymer comprising 100 g diethyl phthalate and 1.5 g of polypropylene glycol. This indicates a weight percentage for the polypropylene glycol in the copolymer being $100 \times 1.5 / 101.5$ or about 1.5 weight percent of polypropylene glycol.

11) When the above is taken with the reference's claim 28 (*col 22 lines 14-16*) and claim 1 (*col 19 lines 62-67 and col 20 lines 1-12*), indicating that the poly alkylene glycol comprises 10-15% of an oxygen scavenging composition comprising

polycondensate polymers with copolymers of polyalkylene glycols and an oxidation catalyst, instant Claim 5 is addressed.

12) As to Claim 8:

13) Oxidation catalysts comprise transition metal salts (*col 4 lines 52-53*).

14) The reference discloses or inherently discloses the limitations for the above Claims.

Claim Rejections - 35 USC § 103

15) Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Cyr et al. (US 6455620)* as applied to Claims 1-6, 8 above.

16) Although the reference indicates testing of films for oxygen permeability using ASTM D3985-81/1988 (*col 16 lines 19-42*), the reference does not indicate use of films having a thickness of 60 um or 0.060 mm; only films of 125 mm (*Example 37 col 19 lines 34-35 and col 16 line 50*) are employed.

17) On the other hand, over a 25 day test, the reference discloses the result for one formulation was zero oxygen permeability (*Table 9 col 16*), when compared with the same samples comprising less polyalkylene glycol and less cobalt catalyst.

18) It is the Examiners position that the detected amount of oxygen permeability would be expected to be obviously influenced by the film thickness.

19) It is also the Examiners position that thickness and composition are result effective variables because changing them will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that “discovery of an optimum

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value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

The reference specifically acknowledges that "[t]hose skilled in the art will recognize that many polymer/polyalkylene glycol combinations are possible without detracting from the spirit of this invention". The reference further discloses that varying amounts of cobalt catalyst indicate variable oxygen permeability (Tables 8 and 9).

20) In view of this, it would have been obvious to one of ordinary skill in the art to utilize or optimize an appropriate composition formulation and thickness, taught within the examples of the reference, including those within the scope of the present claims, so as to produce desired end results.

21) In accord with the case law above, it would have been obvious at the time of the invention to have used results effective variables, such as composition and thickness, to achieve a product that would provide an acceptable oxygen permeation value in the proximity of zero, as taught by the value of reached by *Cyr et al.*

22) Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Cyr et al.* (US 6455620) as applied to Claims 1-6, 8 above, and further in view of *Raff et al.* (*Northwest Science Vol 44 no 3 pp 184-205 1970*). [The analogous association of *Cyr et al.* and *Raff et al.* is based upon crystallinity and processing; *Raff et al.* teaching fundamentals directly related to crystalline polymer processing of *Cyr et al.*.]

23) Although the reference indicates that the polymers are crystalline (Examples 18-19 col 15 lines 1-2, col 16 lines 15-16), and the reference indicates methods upon

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which to crystallize the polymers, the reference does not further accentuate the size of the compositions' agglomerates {understood by the Examiner, from the instant Specification (page 6 lines 1-30), to be the same as polymeric "spherulites"}.

24) On the other hand, *Raff et al.* teaches that spherulite sizes affect gas permeability (*page 191 penultimate paragraph*) and polymers with spherulites have been structurally manipulated by using varying the temperature in preparation techniques {(*page 189, penultimate full paragraph, and last full paragraph*) and Examiner's personal experience, University of Tennessee c. 1992} as well as orientation preparation methods (*page 189 last paragraph to page 190 second full paragraph*). Such structures would be expected to comprise pancake shapes when pressed according to the methods of Cyr (*col 16 lines 13-17*).

25) It is the Examiners position that polymer processing conditions and spherulite or conglomerate sizes are result effective variables because changing them will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

26) In view of this, it would have been obvious to one of ordinary skill in the art to utilize appropriate polymer test structure orientation and processing temperatures, taught by the above references, including those within the scope of the present claims, so as to produce desired end results.

27) In accord with the case law above, it would have been obvious at the time of the invention to have used results effective variables, such as processing temperature schedules and orientation methods, as taught by *Cyr et al.* and *Raff et al.* to achieve a product that would provide an acceptable and spherulite size as taught by and *Raff et al.*

Response to Arguments

Applicant's arguments filed 01/08/2010 have been fully considered but they are not persuasive.

Applicant argues:

A. {pages 9-10 of 12 102(b) rejections}: that the reference of *Cyr et al.* only discloses polypropylene oxides that are non-substituted.

In response, it is the Examiner's position that the reference does not indicate that the propylene segments are linear. A linear propylene oxide is referred to as polyoxetane {see informational reference *Colloid and Polymer Science Vol 261 pp 571-576, 1983; 1st paragraph*. The reference does not disclose polyoxetane.

Further as to page 10: As the reference discloses that the oxygen scavenging compositions comprise co-polymers of alkylene glycols, the reference is taken to inherently disclose that the polymeric compositions comprise polypropylene glycol (col 2 lines 50-56) and that disclosure includes these materials. When in co-polymeric form, with another polyalkylene glycol, (ibid.), the polypropylene oxide, or polypropylene glycol, would be expected to be in combination with another polycondensate.

B. {pages 10-11 103(a) rejections}: that the reference's compositions do not further disclose better oxygen scavenging ability as block co-polymers when compared with random co-polymers.

In response to Applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that copolymers comprise non-block segments and that the composition leads to better, {presumed verifiable} oxygen barrier properties) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant further argues {page 11 3rd full paragraph} that the oxygen barrier properties are not dependent upon a constant film thickness as the materials are tested in accord with an ASTM standard require a specific thickness.

In response, the 103(a) rejection made in regard to film barrier properties {page 6, paragraph 20 prior Office action}: the rejection is based upon the optimization of both composition and film thickness properties. When deciding upon an appropriate or optimum film thickness for comparison, one of ordinary skill in the art would be expected to further investigate composition variations.

Further in regard to Applicant's arguments concerning better barrier properties {page 11 2nd full paragraph}: in accord with the address of Claim 7; the polymeric morphology structure of the crystalline segments in the polymer {taken as being equivalent to polymeric agglomerates as indicated earlier {paragraph 30 page 8 prior

Office action}; it is also the Examiner's position that the fabrication manner that provides the agglomerates of the polymeric material affects the barrier properties and that these factors can also be optimized to reach a desired result.

The rejections stand.

Conclusion

This action is properly final because the claims are rejected on the same grounds as set forth in the previous Office Action mailed on 08 September 2009.

Accordingly, THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). See MPEP § 706.07(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

This action is a final rejection and is intended to close the prosecution of this application. Applicant's reply under 37 CFR 1.113 to this action is limited either to an appeal to the Board of Patent Appeals and Interferences or to an amendment complying with the requirements set forth below.

If applicant should desire to appeal any rejection made by the examiner, a Notice of Appeal must be filed within the period for reply identifying the rejected claim or claims appealed. The Notice of Appeal must be accompanied by the required appeal fee.

If applicant should desire to file an amendment, entry of a proposed amendment after final rejection cannot be made as a matter of right unless it merely cancels claims or complies with a formal requirement made earlier. Amendments touching the merits of the application which otherwise might not be proper may be admitted upon a showing a good and sufficient reasons why they are necessary and why they were not presented earlier.

A reply under 37 CFR 1.113 to a final rejection must include the appeal from, or cancellation of, each rejected claim. The filing of an amendment after final rejection, whether or not it is entered, does not stop the running of the statutory period for reply to the final rejection unless the examiner holds the claims to be in condition for allowance. Accordingly, if a Notice of Appeal has not been filed properly within the period for reply, or any extension of this period obtained under either 37 CFR 1.136(a) or (b), the application will become abandoned.

Examiner Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON GRESO whose telephone number is (571)270-7337. The examiner can normally be reached on M-F 0730-1700.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571 272 1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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